```
Connecting via Winsock to STN



Welcome to STN International!  Enter x:x

LOGINID:SSPTAVXR1614

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2


* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1          Web Page for STN Seminar Schedule - N. America
 NEWS  2  NOV 21  CAS patent coverage to include exemplified prophetic
                  substances identified in English-, French-, German-,
                  and Japanese-language basic patents from 2004-present
 NEWS  3  NOV 26  MARPAT enhanced with FSORT command
 NEWS  4  NOV 26  CHEMSAFE now available on STN Easy
 NEWS  5  NOV 26  Two new SET commands increase convenience of STN
                  searching
 NEWS  6  DEC 01  ChemPort single article sales feature unavailable
 NEWS  7  DEC 12  GBFULL now offers single source for full-text
                  coverage of complete UK patent families
 NEWS  8  DEC 17  Fifty-one pharmaceutical ingredients added to PS
 NEWS  9  JAN 06  The retention policy for unread STNmail messages
                  will change in 2009 for STN-Columbus and STN-Tokyo
 NEWS 10  JAN 07  WPIDS, WPINDEX, and WPIX enhanced Japanese Patent
                  Classification Data

 NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3,
              AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that
specific topic.

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  of commercial gateways or other similar uses is prohibited and may
  result in loss of user privileges and other penalties.

* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 18:32:18 ON 27 JAN 2009

=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.22       0.22

FILE 'REGISTRY' ENTERED AT 18:32:38 ON 27 JAN 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 American Chemical Society (ACS)
```

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 26 JAN 2009 HIGHEST RN 1096253-54-1
DICTIONARY FILE UPDATES: 26 JAN 2009 HIGHEST RN 1096253-54-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

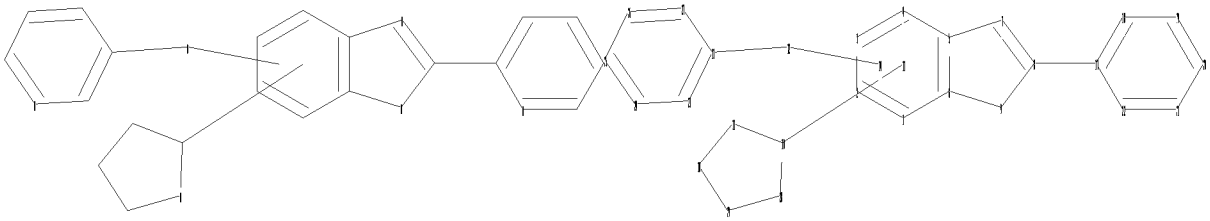
TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\STNEXP\Queries\10582564.str



chain nodes :
12
ring nodes :
1 2 3 4 5 6 7 8 9 10 13 17 18 19 20 21 22 23 24 25 26 27 28
29 30 31
chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 10-28 10-31 13-23 13-27 17-18
 17-22 18-19 19-20 20-21 21-22 23-24 24-25 25-26 26-27 28-29 29-30 30-31

exact/norm bonds :
5-7 6-9 7-8 8-9 10-28 10-31 12-13 28-29 29-30 30-31
exact bonds :
8-17
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 13-23 13-27 17-18 17-22 18-19 19-20 20-21
21-22 23-24 24-25 25-26 26-27

G1:O,S

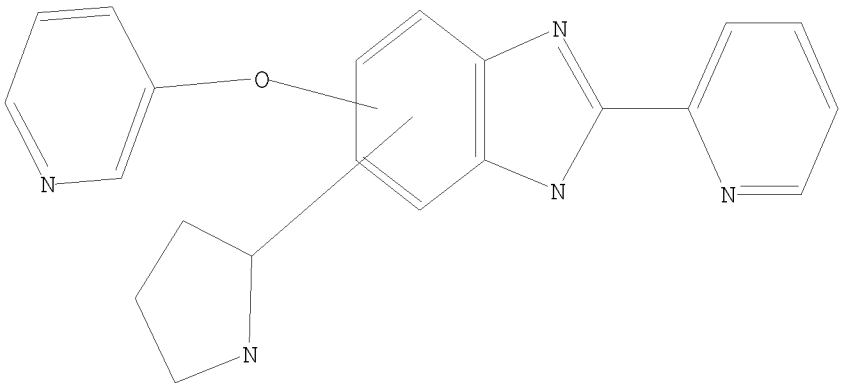
G2:Hy,Ph

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom

L1   STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1   STR



G1 O,S

G2 Hy,Ph

Structure attributes must be viewed using STN Express query preparation.

=> s sam sss l1
SAMPLE SEARCH INITIATED 18:33:13 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -   64 TO ITERATE

100.0% PROCESSED   64 ITERATIONS   8 ANSWERS
SEARCH TIME: 00.00.01

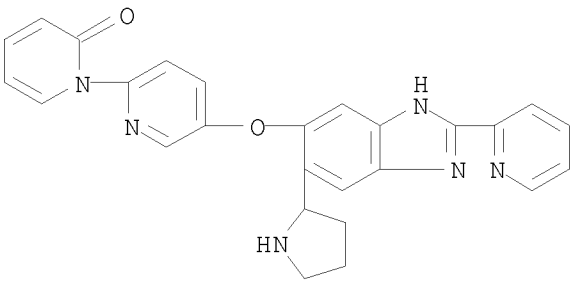
FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS: 800 TO   1760
PROJECTED ANSWERS: 8 TO   329

L2   8 SEA SSS SAM L1

=> d l2

L2   ANSWER 1 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN   859538-93-5 REGISTRY
ED   Entered STN: 11 Aug 2005
CN   [1(2H),2'-Bipyridin]-2-one, 5'-[[2-(2-pyridinyl)-5-(2-pyrrolidinyl)-1H-
     benzimidazol-6-yl]oxy]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   [1(2H),2'-Bipyridin]-2-one, 5'-[[2-(2-pyridinyl)-6-(2-pyrrolidinyl)-1H-
     benzimidazol-5-yl]oxy]- (9CI)
MF   C26 H22 N6 O2
SR   CA

LC STN Files: CA, CAPLUS, USPATFULL

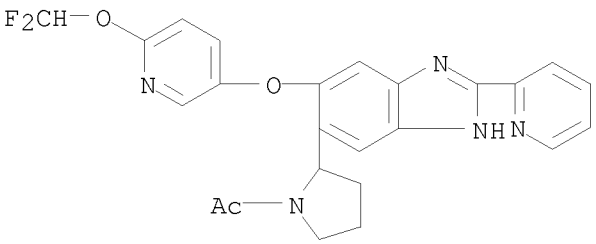


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l2 2-8

L2 ANSWER 2 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859535-88-9 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-[[6-(difluoromethoxy)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-[[6-(difluoromethoxy)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN 6-(1-Acetylpyrrolidin-2-yl)-5-[[6-(difluoromethoxy)pyridin-3-yl]oxy]-2-(pyridin-2-yl)-1H-benzimidazole
MF C24 H21 F2 N5 O3
SR CA
LC STN Files: CA, CAPLUS, USPATFULL



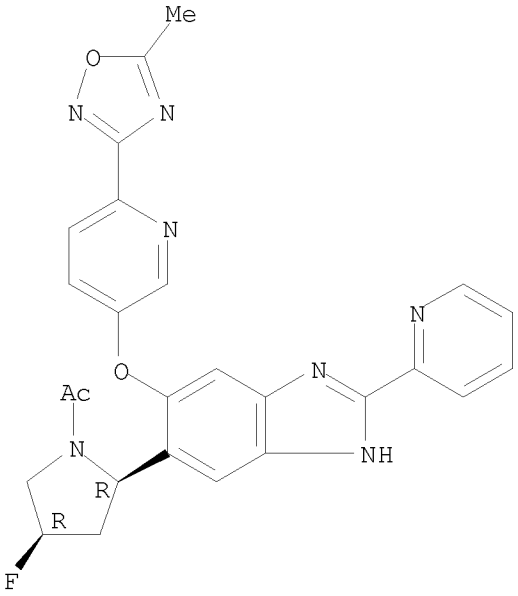
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 3 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859535-69-6 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[(2R,4R)-4-fluoro-2-[6-[[6-(5-methyl-1,2,4-oxadiazol-3-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]-,

rel- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-4-fluoro-2-[6-[[6-(5-methyl-1,2,4-oxadiazol-3-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-, (2R,4R)-rel- (9CI)
OTHER NAMES:
CN cis-1-[4-Fluoro-2-[6-[[6-(5-methyl-1,2,4-oxadiazol-3-yl)pyridin-3-yl]oxy]-2-(pyridin-2-yl)-1H-benzimidazol-5-yl]pyrrolidin-1-yl]ethanone
FS STEREOSEARCH
MF C26 H22 F N7 O3
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

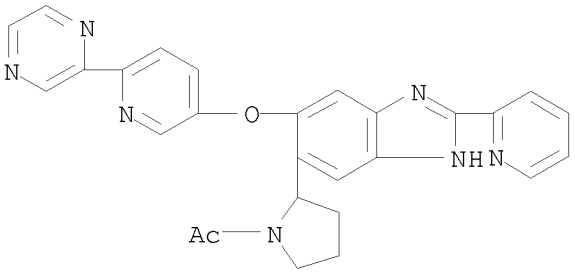
Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

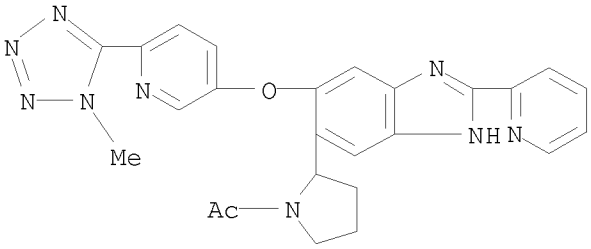
L2 ANSWER 4 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859535-56-1 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-[[6-(2-pyrazinyl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-[(6-pyrazinyl-3-pyridinyl)oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN 6-(1-Acetylpyrrolidin-2-yl)-5-[[6-(pyrazin-2-yl)pyridin-3-yl]oxy]-2-(pyridin-2-yl)-1H-benzimidazole
MF C27 H23 N7 O2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 5 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859535-32-3 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-[[6-(1-methyl-1H-tetrazol-5-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-[[6-(1-methyl-1H-tetrazol-5-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN 6-(1-Acetylpyrrolidin-2-yl)-5-[[6-(1-methyl-1H-tetrazol-5-yl)pyridin-3-yl]oxy]-2-(pyridin-2-yl)-1H-benzimidazole
MF C25 H23 N9 O2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

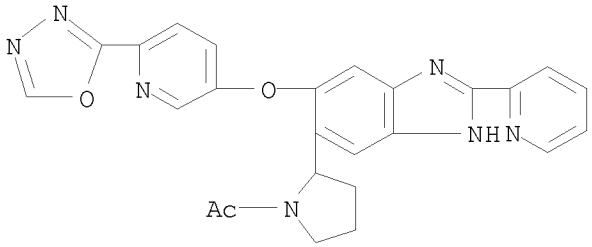


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 6 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859534-96-6 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-[[6-(1,3,4-oxadiazol-2-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-[[6-(1,3,4-oxadiazol-2-yl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN 6-(1-Acetylpyrrolidin-2-yl)-5-[[6-(1,3,4-oxadiazol-2-yl)pyridin-3-yl]oxy]-

2-(pyridin-2-yl)-1H-benzimidazole
MF C25 H21 N7 O3
SR CA
LC STN Files: CA, CAPLUS, USPATFULL



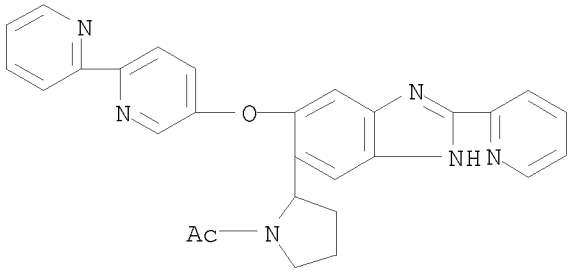
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 7 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859534-75-1 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-([2,2'-bipyridin]-5-yloxy)-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-([2,2'-bipyridin]-5-yloxy)-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-, mono(trifluoroacetate) (9CI)
OTHER NAMES:
CN 5-[[6-(1-Acetylpyrrolidin-2-yl)-2-(pyridin-2-yl)-1H-benzimidazol-5-yl]oxy]-2,2'-bipyridine monotrifluoroacetate
MF C28 H24 N6 O2 . C2 H F3 O2
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

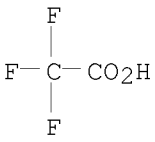
CM 1

CRN 859534-74-0
CMF C28 H24 N6 O2



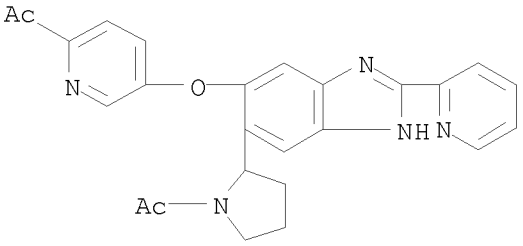
CM 2

CRN 76-05-1
CMF C2 H F3 O2



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 8 OF 8 REGISTRY COPYRIGHT 2009 ACS on STN
RN 859533-30-5 REGISTRY
ED Entered STN: 11 Aug 2005
CN Ethanone, 1-[2-[6-[(6-acetyl-3-pyridinyl)oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Pyrrolidine, 1-acetyl-2-[6-[(6-acetyl-3-pyridinyl)oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN 1-[2-[6-[(6-Acetylpyridin-3-yl)oxy]-2-(pyridin-2-yl)-1H-benzimidazol-5-yl]pyrrolidin-1-yl]ethanone
MF C25 H23 N5 O3
SR CA
LC STN Files: CA, CAPLUS, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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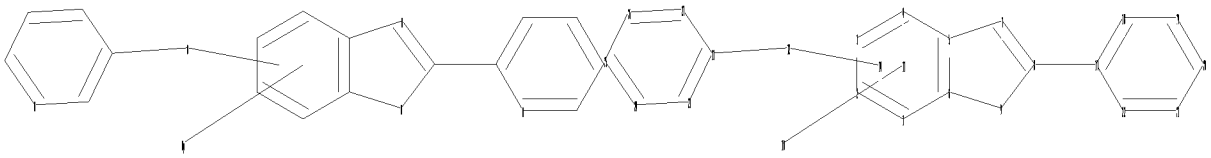


chain nodes :
10 12
ring nodes :
1 2 3 4 5 6 7 8 9 13 17 18 19 20 21 22 23 24 25 26 27

chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 13-23 13-27 17-18 17-22 18-19
 19-20 20-21 21-22 23-24 24-25 25-26 26-27
exact/norm bonds :
5-7 6-9 7-8 8-9 12-13
exact bonds :
8-17
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 13-23 13-27 17-18 17-22 18-19 19-20 20-21
21-22 23-24 24-25 25-26 26-27

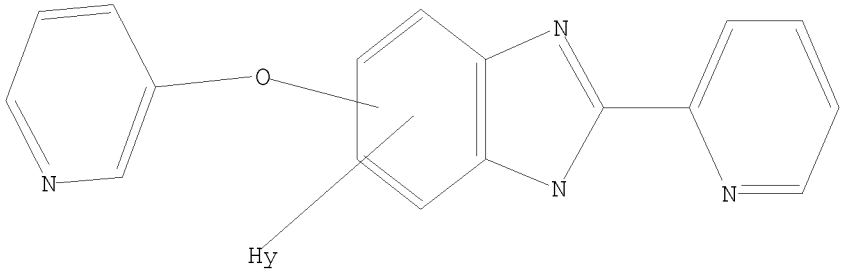
G1:O,S

G2:Hy,Ph

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom

L3   STRUCTURE UPLOADED

=> d l3
L3 HAS NO ANSWERS
L3   STR



G1 O,S
G2 Hy,Ph

Structure attributes must be viewed using STN Express query preparation.

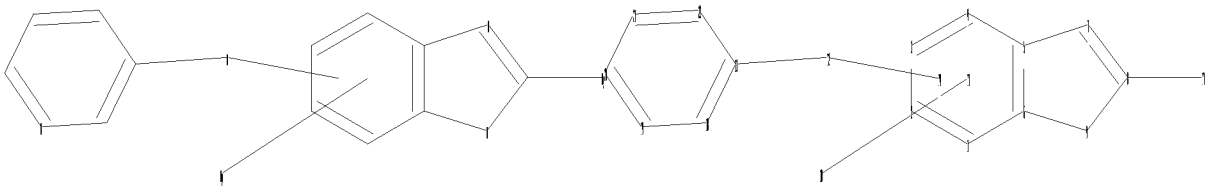
=> s sam sss l3
SAMPLE SEARCH INITIATED 18:42:40 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -   56 TO ITERATE

100.0% PROCESSED   56 ITERATIONS   8 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS: 671 TO   1569
PROJECTED ANSWERS: 8 TO   329

L4   8 SEA SSS SAM L3

=>
Uploading C:\Program Files\STNEXP\Queries\10582564D.str



chain nodes :
10 12 17
ring nodes :
1 2 3 4 5 6 7 8 9 13 18 19 20 21 22
chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 13-18 13-22 18-19 19-20 20-21
21-22
exact/norm bonds :
5-7 6-9 7-8 8-9 8-17 12-13
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 13-18 13-22 18-19 19-20 20-21 21-22

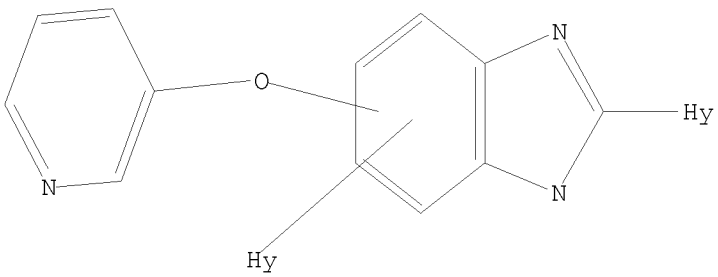
G1:O,S

G2:Hy,Ph

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom
22:Atom

L5 STRUCTURE UPLOADED

=> d l5
L5 HAS NO ANSWERS
L5 STR

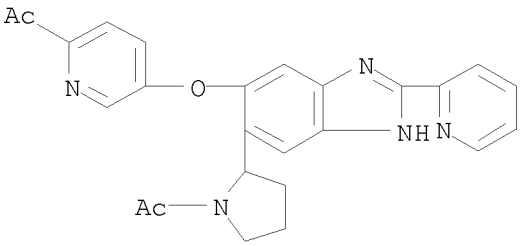


G1 O,S

G2 Hy,Ph

Structure attributes must be viewed using STN Express query preparation.

```
=> s l5 sss sam
SAMPLE SEARCH INITIATED 18:44:22 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     1561 TO ITERATE

100.0% PROCESSED     1561 ITERATIONS                                  9 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        28850 TO    33590
PROJECTED ANSWERS:               9 TO      360

L6            9 SEA SSS SAM L5

=> d l6 9

L6   ANSWER 9 OF 9  REGISTRY  COPYRIGHT 2009 ACS on STN
RN   859533-30-5  REGISTRY
ED   Entered STN:  11 Aug 2005
CN   Ethanone, 1-[2-[6-[(6-acetyl-3-pyridinyl)oxy]-2-(2-pyridinyl)-1H-
     benzimidazol-5-yl]-1-pyrrolidinyl]-  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Pyrrolidine, 1-acetyl-2-[6-[(6-acetyl-3-pyridinyl)oxy]-2-(2-pyridinyl)-1H-
     benzimidazol-5-yl]- (9CI)
OTHER NAMES:
CN   1-[2-[6-[(6-Acetylpyridin-3-yl)oxy]-2-(pyridin-2-yl)-1H-benzimidazol-5-
     yl]pyrrolidin-1-yl]ethanone
MF   C25 H23 N5 O3
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
```

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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=>
Uploading C:\Program Files\STNEXP\Queries\10582564B-1.str
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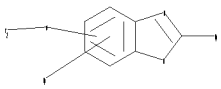
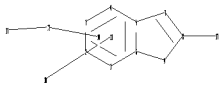




chain nodes :
10 12 13 17
ring nodes :
1 2 3 4 5 6 7 8 9
chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9
exact/norm bonds :
5-7 6-9 7-8 8-9 8-17 12-13
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6

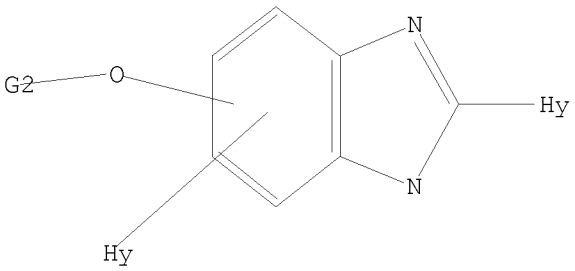
G1:O,S

G2:Hy,Ph

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom

L7 STRUCTURE UPLOADED

=> d l7
L7 HAS NO ANSWERS
L7 STR



G1 O,S

G2 Hy,Ph

Structure attributes must be viewed using STN Express query preparation.

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=> s l7 sam sss
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SAMPLE SCREEN SEARCH COMPLETED -    46545 TO ITERATE

  4.3% PROCESSED     2000 ITERATIONS                                0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:       918014 TO   943786
PROJECTED ANSWERS:               0 TO        0

L8            0 SEA SSS SAM L7

=>
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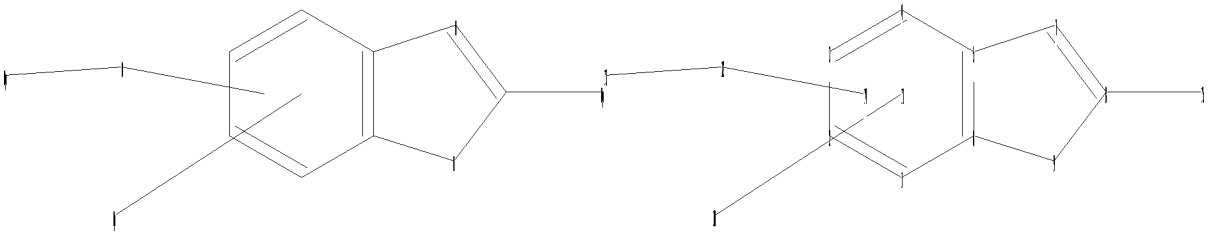

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10  12  13  15
ring nodes :
1  2  3  4  5  6  7  8  9
chain bonds :
8-15  12-13
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6  5-7  6-9  7-8  8-9
exact/norm bonds :
5-7  6-9  7-8  8-9  8-15  12-13
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom  12:CLASS  13:Atom  14:Atom  15:Atom
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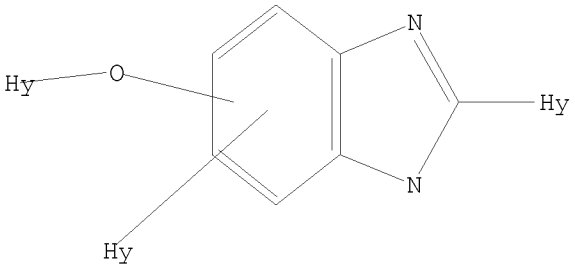
L9 STRUCTURE UPLOADED

=> d l9
L9 HAS NO ANSWERS
L9 STR



Structure attributes must be viewed using STN Express query preparation.

=> s sss sam l9
SAMPLE SEARCH INITIATED 18:57:10 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 50085 TO ITERATE

4.0% PROCESSED 2000 ITERATIONS 0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **INCOMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 988338 TO 1015062
PROJECTED ANSWERS: 0 TO 0

L10 0 SEA SSS SAM L9

=> s l7 full sss
FULL SEARCH INITIATED 19:02:54 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 925193 TO ITERATE

100.0% PROCESSED 925193 ITERATIONS 117 ANSWERS
SEARCH TIME: 00.00.15

L11 117 SEA SSS FUL L7

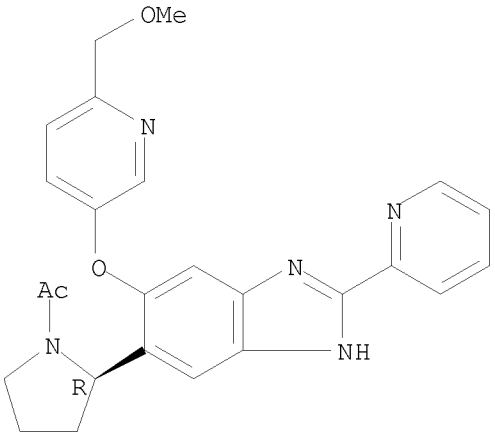
=> d l11 1

L11 ANSWER 1 OF 117 REGISTRY COPYRIGHT 2009 ACS on STN
RN 1034497-90-9 REGISTRY
ED Entered STN: 17 Jul 2008
CN Ethanone, 1-[(2R)-2-[6-[[6-(methoxymethyl)-3-pyridinyl]oxy]-2-(2-pyridinyl)-1H-benzimidazol-5-yl]-1-pyrrolidinyl]-, phosphate (1:1) (CA INDEX NAME)
FS STEREOSEARCH
MF C25 H25 N5 O3 . H3 O4 P
SR CA
LC STN Files: CA, CAPLUS, CASREACT

CM 1

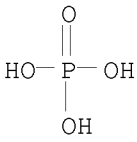
CRN 1034497-89-6
CMF C25 H25 N5 O3

Absolute stereochemistry.



CM 2

CRN 7664-38-2
CMF H3 O4 P



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	231.34	231.56

FILE 'CAPLUS' ENTERED AT 19:04:22 ON 27 JAN 2009

FILE COVERS 1907 - 27 Jan 2009 VOL 150 ISS 5
FILE LAST UPDATED: 26 Jan 2009 (20090126/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

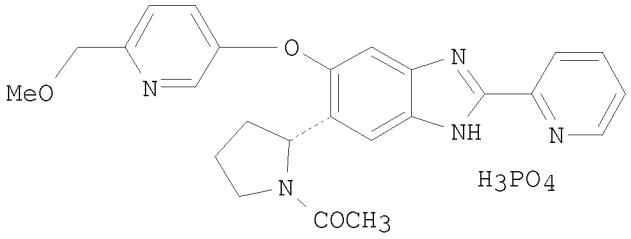
http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s l11
L12   4 L11

=> d l12 ibib abs 1-4

L12 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:643658 CAPLUS
DOCUMENT NUMBER: 149:104639
TITLE: Enantioselective Pd-Catalyzed α-Arylation of
                         N-Boc-Pyrrolidine: The Key to an Efficient and
                         Practical Synthesis of a Glucokinase Activator
AUTHOR(S):   Klapars, Artis; Campos, Kevin R.; Waldman, Jacob H.;
                         Zewge, Daniel; Dormer, Peter G.; Chen, Cheng-yi
CORPORATE SOURCE: Department of Process Research, Merck Research
                         Laboratories, Rahway, NJ, 07065, USA
SOURCE: Journal of Organic Chemistry (2008), 73(13), 4986-4993
                         CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S):   CASREACT 149:104639
GI



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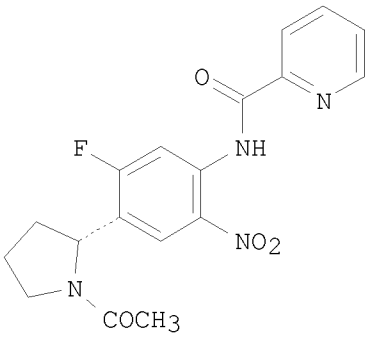


II

AB A short and practical synthesis of glucokinase activator I was achieved utilizing a convergent strategy involving SNAr coupling of activated aryl fluoride II with 3-hydroxy-6-(methoxymethyl)pyridine. The key to the success of the synthesis was the development of a novel method for enantioselective formation of α-arylpyrrolidines during the course of the project. In this method, (-)-sparteine-mediated enantioselective lithiation of N-Boc-pyrrolidine was followed by in situ transmetalation to zinc and Pd-catalyzed coupling with 2-fluoro-4-aminophenyl bromide, proceeding in 92% ee. This transformation allowed the preparation of compound I in a 31% overall yield over six steps.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

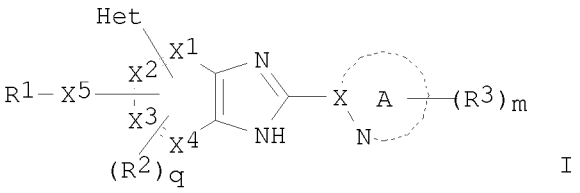
L12 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:110128 CAPLUS
DOCUMENT NUMBER: 146:206296
TITLE: Preparation of heterocyclylbenzimidazoles and their use as medical compositions, glucokinase inhibitors, antidiabetic agents, and antiobesity agents
INVENTOR(S): Ogino, Yoshio; Nonoshita, Katsumasa; Nishimura, Teruyuki; Eiki, Junichi
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 93 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007022937	A	20070201	JP 2005-204151	20050713

PRIORITY APPLN. INFO.: JP 2005-204151 20050713
OTHER SOURCE(S): MARPAT 146:206296

GI



I

AB Title compds. I [X, X1-X4 = C, N; ring A = 5- to 6-membered heteroaryl containing 1-4 N, S, and/or O; Het = 5- to 6-membered (un)substituted aliphatic heterocyclyl containing O or S; X5 = O, S, SO, SO2, SO2N, CO, NSO2; R1 = aryl, C1-6 alkyl, C3-7 cycloalkyl, (un)substituted (condensed) heteroaryl; R2 = CHO, OH, C1-6 alkyl, fluoromethyl(oxy), cyano, halo, etc.; R3 = C1-6 alkyl, (CH2)1-6OH, CO2-C1-6 alkyl, cyano, CO-C1-6 alkyl, halo, CO2H, etc.; R4 = (un)substituted C1-6 alkyl(oxy), C3-7 cycloalkyl, C2-6 alkenyl, (un)substituted amido, CO2-C1-6 alkyl, (un)substituted heterocyclyl, halo, CO2H, OH, NO2, etc.; m, q = 0-2] or their pharmacol. acceptable salts are prepared Thus, cyclization of 5-carbaldehyde-6-[4-(ethylsulfonyl)phenoxy]-2-pyridin-2-yl-1H-benzimidazole with ethylene glycol gave dioxolane derivative, which inhibited human liver glucokinase with EC50 of 1.18 μM.

L12 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:61253 CAPLUS
DOCUMENT NUMBER: 146:142659
TITLE: Preparation of heterocycle-substituted benzimidazole derivatives as glucokinase activators
INVENTOR(S): Ogino, Yoshio; Nonoshita, Katsumasa; Nishimura, Teruyuki; Eiki, Jun-Ichi
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 99pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007007910	A1	20070118	WO 2006-JP314307	20060712
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
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AU 2006267338	A1	20070118	AU 2006-267338	20060712
CA 2614544	A1	20070118	CA 2006-2614544	20060712
EP 1905769	A1	20080402	EP 2006-781274	20060712
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				

IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR
PRIORITY APPLN. INFO.: JP 2005-204438 A 20050713
WO 2006-JP314307 W 20060712
OTHER SOURCE(S): MARPAT 146:142659
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Title compds. I [X1-X4 = carbon or nitrogen atom; ring A = 5- to 6-membered heteroaryl having 1 to 4 heteroatoms independently selected from the group consisting of nitrogen, sulfur or oxygen atom; X = carbon or nitrogen atom; Het = 5- or 6-membered aliphatic heterocycle containing at least one nitrogen or sulfur atom and optionally addnl. heteroatom selected from the group consisting of nitrogen, sulfur or oxygen atom; wherein aliphatic heterocycle is optionally substituted with alkyl, -O-alkyl, oxo, etc.; X5 = -O-, -S-, -S(O)-, etc.; R1 = aryl, alkyl, cycloalkyl, etc.; R2 = formyl, -OH, alkyl, etc.; R3 = alkyl, -O-alkyl, cyano, etc.; m = 0-2; q = 0-2] and their pharmaceutically acceptable salts were prepared For example, oxidation of [6-[4-(ethylsulfonyl)phenoxy]-2-pyridin-2-yl-1H-benzimidazol-5-yl]methanol, e.g., prepared from 2-fluoro-4-nitrobenzoic acid in 8 steps, using pyridine sulfur trioxide followed by reaction with ethylene glycol in the presence of p-TsOH·H2O afforded compound II. In glucokinase (GK) activation assays, the EC50 value of compound II was 1.18 μM. Compds. I are claimed useful for the treatment of diabetes and obesity.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:612280 CAPLUS
DOCUMENT NUMBER: 143:153371
TITLE: Preparation of 2-heteroaryl-substituted benzimidazole derivatives as glucokinase activators
INVENTOR(S): Nonoshita, Katsumasa; Ogino, Yoshio; Ishikawa, Makoto; Sakai, Fumiko; Nakashima, Hiroshi; Nagae, Yoshikazu; Tsukahara, Daisuke; Arakawa, Keisuke; Nishimura, Teruyuki; Eiki, Junichi
PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 549 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063738	A1	20050714	WO 2004-JP19843	20041228

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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AU 2004309287	A1	20050714	AU 2004-309287		20041228
AU 2004309287	B2	20080731			
CA 2553160	A1	20050714	CA 2004-2553160		20041228
EP 1702919	A1	20060920	EP 2004-808192		20041228
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CN 1926127	A	20070307	CN 2004-80042115		20041228
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RU 2329261	C2	20080720	RU 2006-127420		20041228
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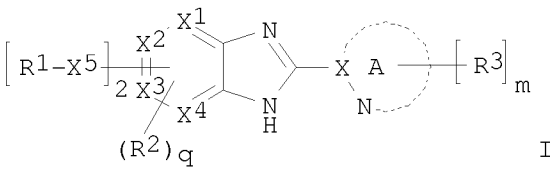
KR 2006105872	A	20061011	KR 2006-713089		20060629
NO 2006003475	A	20060928	NO 2006-3475		20060728
US 20080070928	A1	20080320	US 2007-582564		20070326
PRIORITY APPLN. INFO.:			JP 2003-436992	A	20031229
			JP 2004-235696	A	20040813
			WO 2004-JP19843	W	20041228

OTHER SOURCE(S): MARPAT 143:153371

GI



I

AB The title compds. (I) [X, X1, X2, X3, X4 = C, N; ring A = a 5- or 6-membered nitrogenous aromatic heterocycle containing 1-3 heteroatoms selected from N, S, and O optionally fused to Ph or pyridyl; R1 = aryl, (un)substituted 4- to 10-membered monocyclic or bicyclic heterocyclyl containing 1-4 heteroatoms selected from N, S, and O; R2 = HO, CHO, CH3-aFa, OCH3-aFa, NH2, cyano, halo, C1-6 alkyl, (CH2)1-4-OH (wherein a = 1-3); R3 = C1-6 alkyl, (CH2)1-6-OH, CO2-C1-6 alkyl, (CH2)1-6-O-C1-6 alkyl, (CH2)1-6-NH2, cyano, CO-C1-6 alkyl, halo, C2-6 alkenyl, O-C1-6 alkyl, CO2H, OH, oxo; R4 = (un)substituted C1-6 alkyl, C3-7 cycloalkyl, C2-6 alkenyl, each (un)substituted CONH2, SO2NH2, O-C1-6 alkyl, or CO-C1-6 alkyl, etc.; X5 = O, S, S(O), SO2, single bond, O(CH2)1-6; q, m = 0-2] or pharmaceutically acceptable salts thereof are prepared These compds. are glucokinase activators and useful as therapeutic and/or preventive agents for (1) diabetes, (2) complications of diabetes such as retinopathy, nephropathy, neurosis, ischemic heart disease, and arteriosclerosis, and (3) obesity. Thus, 0.026 mL pyridine-2-carboxaldehyde was added to a solution of 59 mg 3-(2-methoxyphenoxy)-5-(pyridin-3-yloxy)benzene-1,2-diamine in 0.5 mL nitrobenzene at 120° and stirred at the same temperature for 1 h to give 4-(2-methoxyphenoxy)-2-(pyridin-2-yl)-6-(pyridin-3-yloxy)-1H-benzimidazole (II). II in vitro activated 832 % human liver glucokinase expressed in Escherichia coli as flag fusion protein with EC50 of 1.4 μM.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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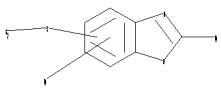

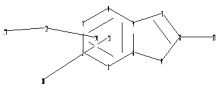

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ring nodes :
1 2 3 4 5 6 7 8 9
chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9
exact/norm bonds :
5-7 6-9 7-8 8-9 8-17 12-13
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6

G1:O,S

G2:Hy,Ph

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom

L13 STRUCTURE UPLOADED

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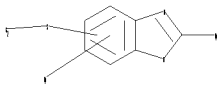
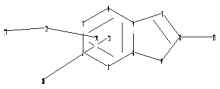




chain nodes :
10 12 13 17
ring nodes :
1 2 3 4 5 6 7 8 9
chain bonds :
8-17 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9
exact/norm bonds :
5-7 6-9 7-8 8-9 8-17 12-13
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6

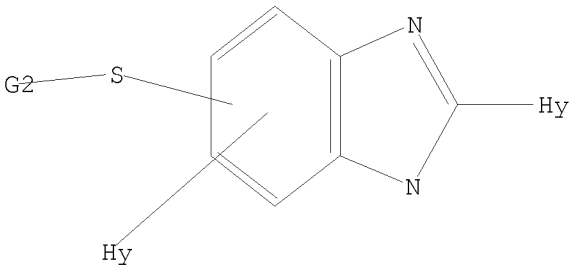
G1:O,S

G2:Hy,Ph

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:CLASS 13:Atom 14:Atom 17:Atom

L14 STRUCTURE UPLOADED

=> d l14
L14 HAS NO ANSWERS
L14 STR



G1 O,S

G2 Hy,Ph

Structure attributes must be viewed using STN Express query preparation.

=> s sam sss l14
   REG1stRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 19:23:26 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -   46545 TO ITERATE

  4.3% PROCESSED   2000 ITERATIONS   0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS: 918014 TO   943786
PROJECTED ANSWERS: 0 TO   0

L15   0 SEA SSS SAM L14

L16   0 L15

=> s full sss l14
   REG1stRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

FULL SEARCH INITIATED 19:23:44 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -   925193 TO ITERATE

100.0% PROCESSED   925193 ITERATIONS   1 ANSWERS
SEARCH TIME: 00.00.15

L17   1 SEA SSS FUL L14

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L18          1 L17

=> d l18

L18  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2009 ACS on STN
AN   2005:612280  CAPLUS
DN   143:153371
TI   Preparation of 2-heteroaryl-substituted benzimidazole derivatives as
     glucokinase activators
IN   Nonoshita, Katsumasa; Ogino, Yoshio; Ishikawa, Makoto; Sakai, Fumiko;
     Nakashima, Hiroshi; Nagae, Yoshikazu; Tsukahara, Daisuke; Arakawa,
     Keisuke; Nishimura, Teruyuki; Eiki, Junichi
PA   Banyu Pharmaceutical Co., Ltd., Japan
SO   PCT Int. Appl., 549 pp.
     CODEN: PIXXD2
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   WO 2005063738        A1    20050714    WO 2004-JP19843         20041228
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
             EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
             RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
             MR, NE, SN, TD, TG
     AU 2004309287        A1    20050714    AU 2004-309287          20041228
     AU 2004309287        B2    20080731
     CA 2553160           A1    20050714    CA 2004-2553160         20041228
     EP 1702919           A1    20060920    EP 2004-808192          20041228
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
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     CN 1926127           A     20070307    CN 2004-80042115        20041228
     BR 2004018212        A     20070427    BR 2004-18212           20041228
     RU 2329261           C2    20080720    RU 2006-127420          20041228
     IN 2006DN03479       A     20070831    IN 2006-DN3479          20060616
     MX 2006007462        A     20060809    MX 2006-7462            20060628
     KR 2006105872        A     20061011    KR 2006-713089          20060629
     NO 2006003475        A     20060928    NO 2006-3475            20060728
     US 20080070928       A1    20080320    US 2007-582564          20070326
PRAI JP 2003-436992       A     20031229
     JP 2004-235696       A     20040813
     WO 2004-JP19843      W     20041228
OS   MARPAT 143:153371
RE.CNT  4     THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> exit
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
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                                                     ENTRY    SESSION
FULL ESTIMATED COST                                   2.75     449.17
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